Ryte Data

Dedicated to 99/4A and 9900 Computer Systems VER 17
1986
NOVEMBER

210 MOUNTAIN STREET
HALIBURTON, ONTARIO K0M 1S0
CANADA

R/D COMPUTING NEWSLETTER

CHICAGO 1986 TI FAIRE

The show was, well, simply wonderful. With the truly excellent support from the Chicago Area Users Group, we had a superb time. THANK YOU! Particular thanks go out to Sandy Bartels, Grant, Tom, Carol, Butch, Buzz, Paul and all the other great people who helped make the event a real success.

Attendance was down from last year - but everyone who attended "came loaded for bear" (thanx Chris). We flew in from Toronto Friday evening with all our equipment only to discover that the airline had thoughtfully shipped everything to New York! Sheer panic ensued... to understate the "state of affairs". After some serious insistence, they managed to ship everything to JFK from La Guardia, then to Chicago. In the early AM I ran out to O'Hare to find out that they had sent our gear to the hotel. Needless to say, we were late in setting up for the show! Just after 9:00 EVERYTHING was in full swing... not a slow start! We didn't even get a chance to set up any equipment before the deluge of avid TI owners decended. It was overwhelming. I loved it!
Over twenty vendors were exhibiting hardware and software for our TI 99/4A - which again underlines the continued viability of the "orphan". The tables were listed as follows:

1/2 J/D LIMITED
3 OTTAWA USERS GROUP
4 BOSTON COMPUTER SOCIETY - DISK-A-ZINE
5 B & D COMPUTER SUPPLIES
6 SOFTMAIL
7-10 COMPETITION COMPUTER
11/12 DATABIONICS - DATABIOTICS
13 BUD MILLS SERVICES
14 HORIZON COMPUTERS LTD.
15/16 RYTE DATA
17 ASGARD SOFTWARE
18/19 MICRO FORMAT
20 GREAT LAKES SOFTWARE
21/22 BBS COMPUTER SALES
23 TENEX
24/25 L.L. CONNER ENTERPRISES
26 TIGERCUB SOFTWARE
27 BYTEMASTER COMPUTER SERVICES
28 TEXAMENTS
29 MYARC INC.
30 CHANNEL 99 USER GROUP
31 DATA SYSTEMS
32 TRIO SOFTWARE
33/34 CHICAGO USERS GROUP
35 TAPE LTD.
36 RAVE 99
37 PC PERSUIT
38 COMPUSERVE
39 C & G DRIVES
40 HUNTER ELECTRONICS

One of the more exciting new products on display (and currently available) was the RAVE 99 keyboard. In fact, RAVE gave us a keyboard to test and review. Just for an advance note, this newsletter is being written using the RAVE 99 keyboard. It is very high quality. The TI 99/4A keyboard has always been irritating (from my perspective), being used to IBM keyboards since my early years. Having a full keyboard, with single keystroke capabilities for FUCTN keys cursor control, numeric keypad etc. is a real treat.

Myarc was on hand showing RUNNING Geneve 9640 computer systems. Lou Philips was answering some very pointed questions about availability. Nice to see they were 'on for the

mission - regardless of the fact that Mitsubishi has not shipped the gate arrays.
The BEST part about the TI Faire was meeting many people with whom we have corresponded or talked with on the phone. Seeing old friends from across the country and meeting new friends (who have helped immensely) was really tremendous. As usual, there was not enough time to visit as much as we would have liked. We also met many of the top flight programmers in the TI community... some of whom will be releasing new GPL based programs for use with the GPL RUN TIME LINKER. Look for more details in the immediate future.

At our table we had Monty Schmidt (thanks again, Monty): Pat Saturn with his neat 4A portable and some very impressive software - including a new program which transfers TI Basic directly via disk or RS-232 to MS Basic; one running on a TI and the other running on an IBM clone! (You can reach Pat at MicroStuph, 1465 Grandview Ave., Columbus, Ohio 43212): and Richard Roseen from AEI - ACCESS ENGINEERING INCORPORATED showing a 99/4A with 64k of CPU MEMORY. The unit Richard demonstrated is designed to be capable of switching in more memory, using a modified operating system, run memory from a 16 bit bus and other features.
Now, before you go on, think about what this means folks! Programs with twice the available memory. Richard had just finished the prototypes and layout diagrams. We are interfacing with this project to add some more great features. We hope to see this serious upgrade available in the near future. More news as it develops - as per usual!

We had the new "99AT" expansion box on display but did not quite have the entire expansion system up and running. With the uproar over lost equipment, we didn't get the time to hook up the power and monitor to the board to run a full TI 99/4A system w/ software out of an "IBM" clone case. There was considerable interest generated from several vendors, groups and individuals - so the availability will reach TI retailers across North America. If your local retailer does not carry our products, request that they contact us for arrangments.

by Tom Freeman
Those of you who regularly read this newsletter regularly will know that we have long taken a public stand against software piracy. Up to this time Terri (Masters) has been the most vocal or most read but she has had full support. It is now time for me to publicly state my position, borne of bitter personal experience.
I had never touched a computer before I got my TI. It was originally a toy for me as it was for many of you, but such a toy! It quickly became a learning tool, and was not only a means to other ends, but an end in itself, as I learned the joys of programming. I am largely self taught, through a lot of HARD work, and the help of many friends. I have achieved a position I never thought possible just a few years ago.
My first "extensive" venture a few years ago was a combination XBasic and Assembly graphics utility called EASYSPRITE. I vainly tried to market it, without any real financial backing and therefore limited success. When I first heard about FREEWARE (which I now think of as "STEALWARE") I decided to go that route. For your information, I have received payment fo LESS THAN one out of TWENTY copies I have sent out.
My last venture was DISkASSEMBLER. Since I thought my main problem was public awareness of my efforts (i.e. advertising) I felt that going with Millers Graphics would be more successful. Let me tell you that I worked long and hard on that program (11 months, the gestation of an elephant), trying to make it perfect ON THE FIRST VERSION to be released. I have a wife and two children who wish they had never heard of it, and wondered if they would ever really have me back again.

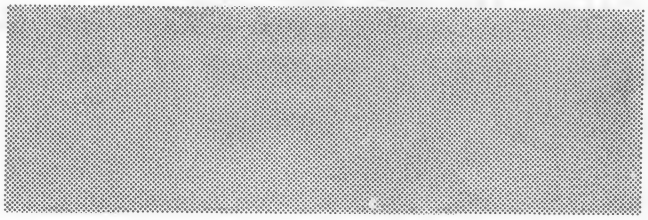
Asgard Software

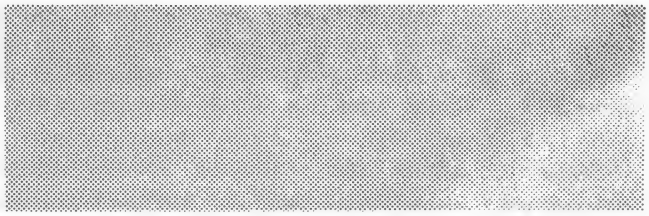
is proud to present a piece of the future:

The first two commercial programs written in c99 for the 99/4A — The fastest language for the 99/4A outside of assembly!

High Gravity

- Is **High Gravity** an educational game or a game program that's educational? Who knows which, and it really doesn't matter considering that this incredible simulation written in c99 (a language faster than Forth and easier to use than BASIC) is one of the best programs ever written for the 99/4A in any language!
- **High Gravity**, by Tom Wible (a professional programmer), puts you in command of a relief spacecraft sent to aid a space station trapped in a strange solar system. The planets in the system are thick as flies, and prevent anyone from leaving or entering the solar system to rescue the unfortunate people in the space station. Your mission is to shoot a capsule of supplies to the stranded astronauts, and you only have ten capsules of supplies on hand. Worse yet, you can't guide the capsules through since they have no engines. Fantastic graphics make this game colorful as well as exciting.
- **High Gravity** is also an extremely accurate simulation of the Laws of Gravity and the motion of projectiles. The fact that this program is a sophisticated lesson on physics is not apparant — it's a really fun game that gives hours of enjoyment to children AND adults. However, for the educational user all varibles of the program may be pre-set; including the initial velocity, the density, size, and spacing of the planets, and much more. High Gravity will even let you save and load interesting flight paths of projectiles for later study — a library of such paths is included with the program.
- In short, **High Gravity** is a sophisticated simulation of space flight that is both entertaining and educational. It is an ideal teacher for the physics student (of all levels), and an ideal game for all ages.





It is simple to use and fully documented. It requires the Editor/Assembler module, 32 K and a disk system. Available for only $14.95.

Total Filer

- Do you have disks and disks full of TI-Writer text files cluttering up your disk library? Do you often catalog one of your TI-Writer disks and find files that you didn't know you had, or even know what they are? Well then, we would like to introduce to you the greatest tool for user's of TI-Writer since the spelling checker; the first and only database designed for text — **Total Filer** by Warren Agee.
- Some database programs say they will let you organize anything, but nothing matches the speed, power and flexibility of a program exclusively designed to let you organize text when it comes to organizing your TI-Writer files. **Total Filer** is a very easy-to-use solution for a complex problem. It is written in c99, an incredibly fast language for the 99/4A, and was designed specifically for handling text.
- With **Total Filer** you can easily create a file-by-file reference of all your text files. Your index can include multiple keyword references for quick searches, as well as several layers of keywords for in-depth descriptions. For searching, **Total Filer** even includes utilities for creating a master listing of the index, as well as letting you compress it to save space on your data disks. **Total Filer** is truly a tool for the "power user."
- **Total Filer** is also very flexible, allowing users to do everything from configure the program for any hardware combination to setting the names of the prompts for different functions. **Total Filer** is the penultimate tool for organizing text of any sort, from magazine articles to computer files, yet it is easy to use and fully documented. It requires the Editor/Assembler module, 32K and a disk system. Available for only $24.95.

Asgard Software

P.O. Box 10306
Rockville, MD 20850
(301) 345-2492

"Serving the TI Community"

Note: c99 compiler for the 99/4A by Clint Pulley

Now I know what the TI community thinks of efforts such as mine. It wasn't long before DISKASSEMBLER was in the trading routes and even on BBS's. What do those of you using pirated versions really think you are accomplishing?

And I am by no means the only victim of this vicious practice! The TI 99/4A, being an "orphan", is in a peculiar position. Currently manufactured computers have an ever-expanding market, as new users come on line. Therefore software authors can count at least on sales to those who do not yet have access to a pirated version. The TI, on the other hand, since the big rush of new users who bought at the "close-out" sales, has a relatively stable market. It has been said that there are several million 99/4A's out there, but I recently heard an estimate that there are probably only 250,000 or so actually in use, rather than in the closet. Many already know where the good sources of software are. I strongly believe that those who are trying to make even a little money on this computer, and the VERY few who are trying to MAKE A LIVING with it, will shortly be getting out of the market, unless the piracy stops.

You may have noticed that there isn't much software being produced anymore. There are a lot of good programs that are constantly being revised, as the bugs are noticed and worked out by users. You need umpteen disks and a lot of patience to get a properly working version. Software of serious commercial quality takes TIME, and the motivation to make the time comes from rewards, both monetary and personal. It really galls me to see the pirates not only steal the programs, but even take the authors' names off them, so the unwitting recipient doesn't even know whom to thank! And here's another amazing idea to consider. Even when you BUY the programs being marketed for the TI, you are paying 1/3 to 1/10 the cost of similar programs for other computers! In other words, you are already getting a bargain - why destroy it???

Recently a major software producer announced that he would stop producing for the 99/4A because of piracy, in particular because he had found his programs on bulliten boards. A great hue and cry went up and he did rescind his decision. But I still have seen his programs on BBS's for free downloading. You sysops MUST police your boards better!

Now let me sum this up. As implied by the statement under the title, the continued well-being of the 99/4A is UP TO YOU. Unless you are willing to support the continued production of quality software by paying the very reasonable amounts that authors and software companies charge for their programs, you will soon see the market disappear. PLEASE DON'T LET THIS HAPPEN!

Happy computing anyway.
Tom Freeman - LA TOPICS NEWSLETTER

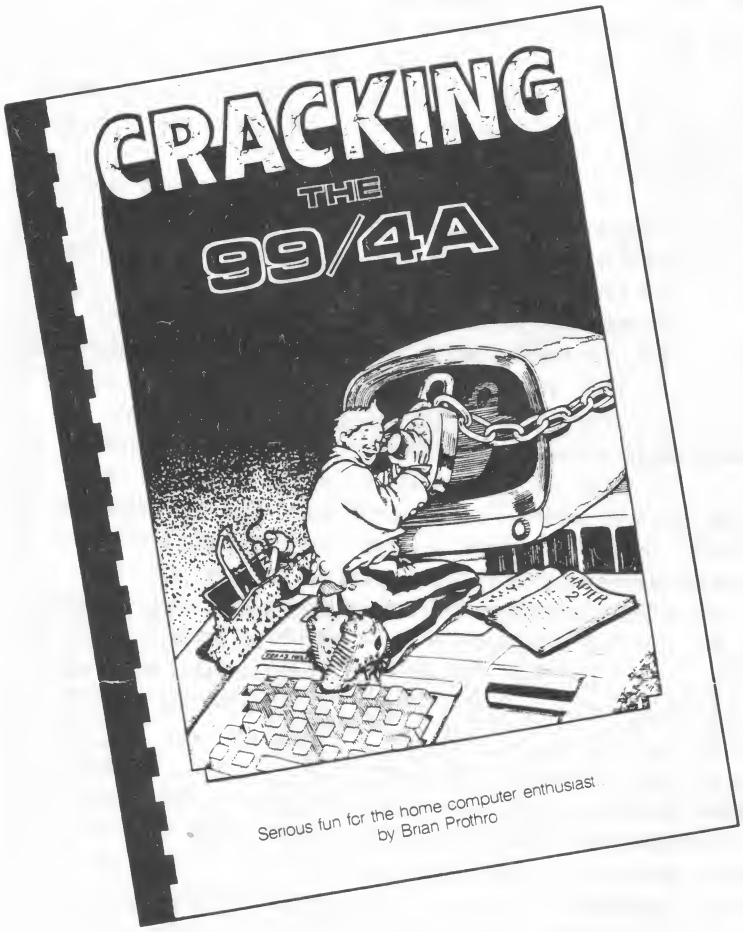
TIGERCUB SOFTWARE

For quite some time now Jim Peterson of Tigercub Software has published "Tips from the Tigercub" - a monthly set of routines and interesting tips and tricks with TI Basic and Extended Basic. Many of these articles are truly amazing... stuff borne of long experience and dedicated system sleuthing.
As Jim put it, "Tips" was done as a promotion for his software and support effort for TI users groups. Well, it hasn't worked out that way. The costs have exceeded the returns substantially.
With Tips #41 reprinted here, Tips from the Tigercub has ended. We feel that this is indicative of the state

CRACKING THE 99/4A

They said the 99/4A was a white elephant, they said it was expensive, they even said it was ugly! But it's still here, and all of us 99ers got the last laugh. So to put one laugh on top of another, from deep in the heart of Texas comes a new book. CRACKING THE 99/4A, written by Brian Prothro and illustrated by Wiley Akins.

CRACKING THE 99/4A is an intermediate level book. There are games and tips (as usual) and for many programs, the code is explained in detail. There are two tutorials. One is a very thorough lesson on Basic that covers structured programming, and linked lists (The sortless sort.) The second tutorial leads you through the powerful use of logical operators—from scratch.

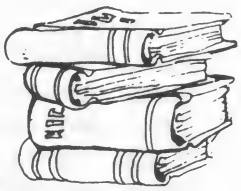


Would you like to use speech in your programs, but it's so much trouble you say "why bother!" This book includes two utilities that allow you to edit allophone strings and/or test speech slope parameters. (Tone of voice.) You'll find some graphics here and a few tips there. And for you dyed in the wool hackers, there are file I/O routines in assembly with additional code that lets you inspect a merged file.

All in all this is a uniquely different book. It is easy going and has tried to hit the middle of the road for all users. A full diskette is available which contains most of the major programs in the book. This should save you a lot of trouble, some of these programs are long.

You're interested—Right! So drop an order in the mail, and if not an order, send us a letter. Any questions can be directed through the address below.

	COVER PRICE
BOOK	$12.95
DISKETTE	$ 6.95
BOOK & DISKETTE	$16.95



CRACKING THE 99/4A

MIDNIGHT EXPRESS PUBLISHERS
DEPT. UGL
P.O. BOX 26941
AUSTIN, TEXAS 78755

No C.O.D.'s
Add $1 shipping per book. Maximum $3 dollars.

TIPS FROM THE TIGERCUB

#41

Copyright 1986

TIGERCUB SOFTWARE
156 Collingwood Ave.
Columbus, OH 43213

Distributed by Tigercub Software to TI-99/4A Users Groups for promotional purposes and in exchange for their newsletters. May be reprinted by non-profit users groups, with credit to Tigercub Software.

Over 130 original programs in Basic and Extended Basic, available on cassette or disk, only $3.00 each plus $1.50 per order for PPM. Entertainment, education, programmer's utilities. Descriptive catalog $1.00, deductable from your first order.

Tigercub Full Disk Collections, just $12 postpaid! Each of these contains either 5 or 6 of my regular $3 catalog programs, and the remaining disk space has been filled with some of the best public domain programs of the same category. I am NOT selling public domain programs - my own programs on these disks are greatly discounted from their usual price, and the public domain is a FREE bonus!
TIGERCUB'S BEST, PROGRAMMING TUTOR, PROGRAMMER'S UTILITIES, BRAIN GAMES, BRAIN TEASERS, BRAIN BUSTERS!, MANEUVERING GAMES, ACTION REFLEX AND CONCENTRATION, TWO-PLAYER GAMES, KID'S GAMES, MORE GAMES, WORD GAMES, ELEMENTARY MATH, MIDDLE/HIGH SCHOOL MATH, VOCABULARY AND READING, MUSICAL EDUCATION, KALEIDOSCOPES AND DISPLAYS
NUTS & BOLTS (No. 1), a full disk of 100 Extended Basic utility subprograms in merge format, ready to merge into your own programs. Plus the Tigercub Menuloader, a tutorial on using subprograms, and 5 pages of documentation with an example of the use of each subprogram. All for just $19.95 postpaid.
NUTS & BOLTS NO. 2, another full disk of 100 utility subprograms in merge format, all new and fully compatible with the last, and with 10 pages of documentation and examples. Also $19.95 postpaid, or both Nuts Bolts disks for $37 postpaid.

TIPS FROM THE TIGERCUB, a full disk containing the complete contents of this newsletter Nos. 1 through 14, 50 original programs and files, just $15 postpaid.
TIPS FROM THE TIGERCUB VOL. 2, another diskfull, complete contents of Nos. 15 through 24, over 60 files and programs, also just $15

```
****************************
*                          *
*  TIPS FROM THE TIGERCUB  *
*  VOL. 3 is now ready.    *
*  Another 62 programs,    *
*  routines, tips, tricks  *
*  from Nos. 25 thru 32.   *
*  Also $15 postpaid.      *
*                          *
****************************
```

```
****************************
*                          *
*  TIPS FROM THE TIGERCUB  *
*  Vol. 4 is now ready.    *
*  Another 48 programs,    *
*  routines, tips, tricks  *
*  from Nos. 33 thru 41.   *
*  Also $15 postpaid. Any  *
*  two Tips disks for $27, *
*  any 3 for $35, all 4    *
*  for $42, postpaid.      *
*                          *
****************************
```

This will be the last issue of the Tips from the Tigercub.

I started this newsletter over 3 years ago, as a means of promoting my software business. It has never been a success for that purpose, but I have kept it going because of the many interesting newsletters that I have received in exchange, and the many friends that I have made around the world.

I know, from the editors' comments in many of your newsletters, that many of you are finding it difficult to finance a newsletter for your shrinking membership, and even more difficult to find the time, and the material to print. For a one-man user's group pretending to be a business which is getting very little business, it has become impossible. User group members have never been good customers for anyone's software, for reasons which you all know, and those who are remaining active in the TI world are wanting more sophisticated software than I have to offer.

Some of you have offered to subscribe to my Tips, but I just don't have the time to get involved in anything like that. I have had some other projects on the back burner for too long, and it's time I got to work on them - they can hardly turn out to be less profitable than trying to sell software!

I am NOT going out of business, and I am NOT releasing my programs to the public domain. I will continue to sell them, and will continue some classified advertising.

My heartfelt thanks to the many user group editors and officers who have tried in many ways to encourage and help me. Many thanks to those who have purchased my programs.

I will greatly miss your newsletters. I do hope to keep in contact with some of you. Perhaps now I can find time to browse in the TI sections of CompuServe or GENIE, and perhaps I will meet you there.

The answer to the challenge in the last Tips? For a clue, try -
DISPLAY AT(24,1):0 in Basic.

Still don't get it? In Basic, DISPLAY is the same as PRINT, but AT is not recognized, so the computer thinks you are telling it to print the variable AT(1,1) - which, being undefined, is 0 - and advance to the next line (the :) and print 0.

I have always wanted a pocket calculator with several memories and a window to display the contents of each one. So, since there is plenty of room for windows on a TV screen, I wrote one.

It does not require any use of the Enter key, but each CALL KEY input must be validated and processed, so don't type too fast. It will accept such inputs as M1=7= or M1=7+1= or M2=1-M1= to put a value in a memory, or 6+7= or 6+M2= to calculate and display, or 6+7M1 or M1-.M2M3 to calculate and put into memory, and will even do multiple calculations such as 1+2-3/4*5%6, subtotaling after the first two.

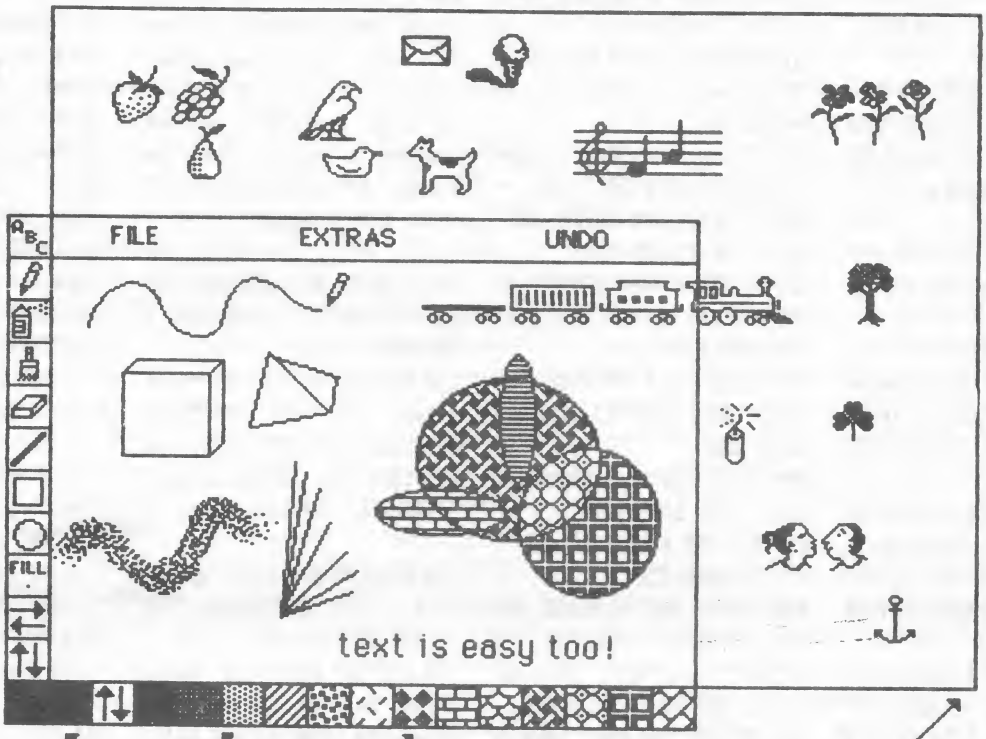
```
100 CALL CLEAR :: CALL SCREE
N(5):: DEF S$(X)=SEG$(A$,X,1
)&" = " :: CALL PEEK(8198,A)
:: IF A<>170 THEN CALL INIT
110 CALL LOAD(-31806,16):: O
N WARNING NEXT :: GOTO 140
120 SET,M$(),K,S,A$,S$(),R,C
,N,N1,N2,N1F,N2F,M1F,M,MF,DF
,FF,VF,EF,FL,N$,F2,T,M2,MEM(
),ST,NX,ZF
130 CALL COLOR :: CALL CHAR
:: CALL KEY :: CALL SOUND !@
P-
140 FOR SET=0 TO 4 :: CALL C
```

NEW! FROM THE CREATORS OF BANNER '99 AND EXTENDED BUSINESS GRAPHS.....

JOY PAINT '99

(C) Copyright 1986

ENTIRELY JOYSTICK CONTROLLED!!



92% MORE GRAPHICS SPACE THAN PREVIOUS TI GRAPHICS PROGRAMS!!

USE TOOLS, SUCH AS PENCIL, ERASER, PAINT BRUSH CIRLCE, OVAL BOX, LINE & TEXT!

THE SCREEN ACTS LIKE A WINDOW!

screen size

Joy Paint'99 graphics page size
(shown smaller than actual print size)

REQUIRES
TI-99/4A, 32K, Disk drive, Joy Stick, and one of the following: Extended Basic, Editor/Assm, or Mini-Memory.

Epson compatible printer such as Gemini 10x or 15x, TI impact, etc. is optional.

(soon other printers too!)

Our all new 100% assembly language program features graphic capabilities found in no other software application. Use JOY PAINT '99 to create signs, charts, diagrams, advertisements, or graphics of any type. JOY PAINT '99 is sophisticated, yet simple to use. In fact, the user never needs to touch the keyboard; all functions are joystick controlled. There are no complicated function keys to remember, just simple on-screen TOOLS. JOY PAINT '99 allows circles and ovals to be drawn with incredible speed and precision. Lines, boxes and rectangles can also be quickly drawn! Additionally, the FILL, PAINT BRUSH, and SPRAY-CAN tools allow filling and painting in any one of twenty six selectable PATTERNS! JOY PAINT '99 also feature 8 different brush shapes!

A 'pull down window' contains many more features that make creating and manipulating graphics fun and easy. Any object can be INVERTED, ROTATED, FLIPPED VERICALLY or HORIZONTALLY, COPIED, MOVED, OR STORED ON A CLIPBOARD! A MAGNIFY feature allows graphics to be increased. A ZOOM OPTION, called FATPIXELS, allows fine single dot editing.

JOY PAINT '99 also contains dozens of features not found in any other graphics application. For instance an 'UNDO' feature that instantly 'takes back' the last portion of work the user performed! Its DIRECTORY feature can catalog your diskettes! JOY PAINT '99 CONSERVES DISK SPACE, by not saving the redundant blank areas in your graphics! Printouts can be made directly in normal, or double size, and in single or double density! Be among the first to experience this unique and practical program; ORDER YOURS TODAY.....$49.95 POSTPAID.

COMING SOON:
JOY PAINT '99 COMPANION!

With hundreds of pre-designed graphics!

GREAT LAKES SOFTWARE

804 E. Grand River Ave., Howell, MI 48843

```
OLOR(SET,16,1):: NEXT SET ::
 FOR SET=5 TO 8 :: CALL COLO
R(SET,5,16):: NEXT SET :: CA
LL CHAR(64,"0")
150 FOR SET=9 TO 12 :: CALL
COLOR(SET,16,1):: NEXT SET
160 DISPLAY AT(1,10):"TIGERC
UB":"   MULTIMEMORY@CALCULAT
OR": :"MEMORY #1": :"MEMORY
#2": :"MEMORY #3": :"MEMORY
#4": :"MEMORY #5"
170 M$(1)="0123456789.+-*/%=
CXM" :: M$(2)="0123456789.AS
MDPECXM" :: DISPLAY AT(20,1)
:"use ?":"(1) symbols":"(2)
alpha characters"
180 CALL KEY(0,K,S):: IF S=0
 OR K<49 OR K>50 THEN 180 ::
 A$=M$(K-48)
190 DISPLAY AT(20,1):S$(12);
"add";TAB(16);S$(16);"percen
t" :: DISPLAY AT(21,1):S$(13
);"subtract";TAB(16);S$(17);
"equals"
200 DISPLAY AT(22,1):S$(14);
"multiply";TAB(16);S$(18);"c
ancel" :: DISPLAY AT(23,1):S
$(15);"divide by";TAB(16);S$
(19);"clear all"
210 DISPLAY AT(24,1):"M1 to
M5 = memories #1 to #5"
220 R=15 :: C=1 :: N,N1,N2,N
1F,N2F,M1F,M,MF,DF,FF,VF,EF,
FL,ZF=0 :: N$="" :: DISPLAY
AT(18,1):""
230 CALL KEY(3,K,S):: IF S<1
 THEN 230 :: CALL SOUND(50,5
00,5):: DISPLAY AT(R,C):CHR$
(K):: C=C+1
240 ON POS(A$,CHR$(K),1)+1 G
OTO 260,270,270,270,270,270,
270,270,270,270,270,280,290,
250,290,290,290,340,410,420,
430
250 IF VF=1 OR MF=1 THEN 290
 :: ZF=1 :: N$="-" :: GOTO 2
30
260 DISPLAY AT(R,C-1):"?" ::
 C=C-1 :: GOTO 230
270 IF MF=1 THEN 260 :: FL=0
 :: VF=1 :: IF DF=0 AND ZF=0
 THEN N=N*10+K-48 :: GOTO 23
0 ELSE N$=N$&CHR$(K):: GOTO
230
280 IF DF=1 THEN 260 :: DF=1
 :: MF,FL=0 :: IF ZF=1 THEN
N$=N$&"." :: GOTO 230 ELSE N
$=STR$(N)&"." :: GOTO 230
290 IF C=2 OR FL=1 THEN 260
:: FL=1 :: IF FF=0 THEN 320
300 F2=POS(A$,CHR$(K),1)-11
:: IF VF=1 THEN GOSUB 480
310 GOSUB 520 :: N1=T :: DIS
PLAY AT(18,1):"SUBTOTAL":T :
: N2F,N2=0 :: FF=F2 :: GOTO
230
320 IF VF=0 THEN 330 :: VF,M
F=0 :: GOSUB 480
330 MF=0 :: FF=POS(A$,CHR$(K
),1)-11 :: GOTO 230
340 IF C=2 OR(FF=0 AND M1F=0
)OR(C=4 AND M1F=0)OR FL=1 TH
EN 260
350 IF C=4 THEN EF=1 :: M2=M
 :: N1F,MF=0 :: GOTO 230
360 IF VF=1 THEN GOSUB 480
370 IF EF=0 THEN 400
380 IF N2F=0 THEN MEM(M2)=N1
 :: DISPLAY AT(M2*2+2,11):N1
 :: GOTO 220
390 GOSUB 520 :: MEM(M2)=T :
: DISPLAY AT(M2*2+2,11):T ::
 GOTO 220
400 GOSUB 520 :: DISPLAY AT(
15,C):T :: GOTO 220
410 DISPLAY AT(R,1):"":"":""
:"" :: GOTO 220
420 MEM(1),MEM(2),MEM(3),MEM
(4),MEM(5)=0 :: FOR R=4 TO 1
2 STEP 2 :: DISPLAY AT(R,10)
:"" :: NEXT R :: GOTO 410
430 IF EF=1 AND MF=1 THEN 26
0
440 CALL KEY(3,K,ST):: IF ST
<1 OR K<49 OR K>53 THEN 430
ELSE CALL SOUND(50,500,5):: 
M=K-48 :: DISPLAY AT(R,C):CH
R$(K);:: C=C+1 :: MF=1 :: FL
=0 :: IF VF=1 THEN GOSUB 480
450 IF N1F=0 THEN M1F,N1F=1
:: N1=MEM(M):: IF ZF=1 OR DF
=1 THEN N1=VAL(N$&STR$(N1)):
: DF,ZF=0 :: GOTO 230 ELSE 2
30
460 IF N2F=0 THEN N2F=1 :: N
2=MEM(M):: IF ZF=1 OR DF=1 T
HEN N2=VAL(N$&STR$(N2)):: DF
,ZF=0 :: GOTO 230 ELSE 230
470 GOSUB 520 :: MEM(M)=T ::
 DISPLAY AT(M*2+2,11):T :: G
OTO 220
480 IF DF=0 AND ZF=0 THEN NX
=N ELSE NX=VAL(N$):: DF,ZF=0
490 IF N1F=0 THEN N1=NX :: N
1F=1 :: GOTO 510
500 N2=NX :: N2F=1
510 VF,N=0 :: N$="" :: RETUR
N
520 IF FF=1 THEN T=N1+N2 ELS
E IF FF=2 THEN T=N1-N2 ELSE
IF FF=3 THEN T=N1*N2 ELSE IF
 FF=4 THEN T=N1/N2 ELSE T=N1
*N2/100
530 RETURN
```

I have always been annoyed by the difficulty of hyphenating with TI-Writer, when I want to avoid the gaping holes that wraparound and Fill and Adjust can cause. Manually filling and adjusting with carets is slow, and leaving a space after the hyphen is unreliable, so I wrote this program.

```
100 DISPLAY AT(2,10)ERASE AL
L:"TIGERCUB":"  HYPHENATED F
ILL AND ADJUST"
110 DISPLAY AT(6,1):" Prepar
e text with TI-Writer":"Edit
or. Leave left TAB at 0,":"s
et right TAB  at the actual"
:"value of the line length d
e-"
120 DISPLAY AT(10,1):"sired
(i.e.,  for  a 28-char":"lin
e, set it at 28)."
130 DISPLAY AT(12,1):" Inden
t  as  desired. Center":"hea
dings  as  desired but be":"
sure  to  follow them with a
":"line feed (Enter). Hyphen
ate"
140 DISPLAY AT(16,1):"as  de
sired  and  follow the":"hyp
hen  immediately  with  a":"
line feed (Enter)."
150 ON ERROR 160 :: GOTO 170
160 ON ERROR 160 :: RETURN 1
70
170 DISPLAY AT(20,1):"INPUT
FILE? DSK" :: ACCEPT AT(20,1
6)BEEP:F$ :: OPEN #1:"DSK"&F
$,INPUT
180 DISPLAY AT(22,1):"OUTPUT
 FILE? DSK" :: ACCEPT AT(22,
17)BEEP:NF$ :: OPEN #2:"DSK"
&NF$,OUTPUT
190 DISPLAY AT(24,1):"LINE L
ENGTH?" :: ACCEPT AT(24,14)V
ALIDATE(DIGIT):L
200 LF$=CHR$(13):: H$="-"&CH
R$(13)
210 ON ERROR 210 :: GOTO 220
220 ON ERROR 210 :: RETURN 3
10
230 LINPUT #1:M$ :: IF M$="
" OR M$=LF$ OR M$="" OR ASC(
M$)>127 OR(LEN(M$)=L AND POS
(M$,LF$,1)=0)OR POS(M$," ",1
)=0 THEN 310
240 IF POS(M$,LF$,1)<>0 AND
POS(M$,H$,1)=0 THEN 310
250 IF POS(M$,H$,1)<>0 THEN
M$=SEG$(M$,1,LEN(M$)-1)
260 IF LEN(M$)=L THEN 310
270 P=1
280 X=POS(M$," ",P):: IF X=P
 THEN P=P+1 :: GOTO 280 ELSE
 Y,P=X :: IF POS(M$," ",P)=0
 OR P=L THEN 310
290 M$=SEG$(M$,1,X)&" "&SEG$
(M$,X+1,255):: IF LEN(M$)>=L
 THEN 310 ELSE P=X+2
300 X=POS(M$," ",P):: IF X=0
 THEN P=Y :: GOTO 300 ELSE G
OTO 290
310 PRINT #2:M$ :: IF EOF(1)
<>1 THEN 230 ELSE CLOSE #1 :
: CLOSE #2
```

Here is one for the preschoolers -

```
100 CALL CLEAR :: CALL SCREE
N(14):: CALL COLOR(1,11,11,1
2,5,5):: DISPLAY AT(3,10):"S
EE-N-SAY": : :"PRESS ANY KEY
" !by Jim Peterson based on
a routine by Michael Lyons
110 DIM E$(16),PAT$(16):: CA
LL CHAR(123,RPT$("F",16))
120 DATA "    ","   {","  {
","  {{","{  ","  { {","  {{
","  {{{","{   ","{  {","{ {
","{ {{","{{  ","{{ {","{{{
","{{{{"
130 FOR J=0 TO 15 :: READ PA
T$(J):: NEXT J
140 CALL KEY(0,K,S):: IF S=0
 THEN 140
150 CALL CHARPAT(K,CP$):: FO
R X=1 TO 16 :: Y=ASC(SEG$(CP
$,X,1)):: E$(X)=PAT$(Y+(Y>57
)*7-48):: NEXT X :: IF K>96
AND K<123 THEN K=K-32
160 CALL CLEAR :: CALL SAY(C
HR$(K)):: FOR X=2 TO 16 STEP
 2 :: DISPLAY AT(8+(X/2),12)
:E$(X-1);E$(X):: NEXT X
170 CALL SAY(CHR$(K)):: GOTO
 140
```

And so, one more time

MEMORY FULL

Jim Peterson

of affairs with software production and support shown to TI supporters. If you feel this is detrimental to the continued existence of your computer - buy something from one of your support companies. Simple, right?

QUAD DENSITY TI DISK CONTROLLER

We're very happy to report that the interest in the PROM set for upgrading the TI disk controller card has been entirely sufficient. This seems to be important enough to warrant the production of the upgrade set.
You may order these for $45.00 (US) or $60.00 CDN funds on immediate delivery. Full instructions are included with diagrams.
The upgrade will provide TI owners with the original TI Disk Controller Card to upgrade to double-sided, double- [redacted] density storage capacity. This works out to 1440 sectors PER [redacted] DISK using 80 track drives and high density disks. You are also allowed to mix and match drive types.

Remember, it is necessary to remove the existing ICs on the card. See diagram below. This requires a de-soldering tool and strict anti-static procedures to avoid damage to the card.
If you cannot do the job - or do not have anyone experienced - we will install the PROMs for you for an additional $10 (US) $12 (CDN) shipping prepaid. All you have to do is send us your disk controller card (insured please!) via parcel post, UPS or Purolator with your payment. We will install the new chips and return your card within 48 hrs of receipt. FASTer UPS shipping will cost an additional $10.00 (US funds - $14.00 CDN funds).

ANNOUNCING "TECHNICAL DRIVE" - A new book by Monty Schmidt.
The lack of in-depth technical information has been addressed once again with this new publication. Monty Schmidt finished this new book for the Chicago Faire.
It covers detailed information on the inner working of the TI Disk Controller, RS-232, DSRLNK and the CorComp 9900 Clock Peripheral. With 200 pages of disassembled and FULLY commented code, this book delves into the heart of the DSR system (Device Service Routine) used by TI to interface a wide range of peripherals to the TI 99/4A.
This information has never been covered in one reference, in such depth or in a clear format publicly available.
This book gives TI owners, enthusiasts, programmers and developers more data on interfacing peripherals to the 99/4A. In conjunction with the information TI did publish and the book "INTERN", a complete reference library is now available.
Further, the book goes on to discuss 'low level' disk controller software access and software routines contained in the DSRLNK for the MiniMemory module. In addition, programming examples are included to illustrate the techniques used for interacting with these peripherals.

PRICE: $17.00 (US) or $23.00 (CDN) plus $2.00 shipping. If you order before January 15th a 10% discount price of $17.10 including shipping.

DEMOGRAPHICS

Bill Gronos wondered what type of audience he is writing for. Seems valuable to pass this information along from the reader survey done earlier this year...
97% of all readers have fully expanded systems.
40% have more than 50 software programs.
99% are positive that technical information is essential.
60% do not plan on buying the GENEVE in the immediate future. (wait 'n see)

Micro Stuph Inc.

Texas Instruments
Computer Dealer

Pat Saturn
(614) 486-7262
1456 Grandview Avenue
Columbus, Ohio 43212

(301) 340-9617

Asgard Software
SERVING THE TI COMMUNITY

CHRIS BOBBITT
P.O. Box 10306
ROCKVILLE, MD 20850

RMJ

Business
Education
Entertainment

RMJ Home Computer Sales
"Computers For Profit and Pleasure"

JOE NUVOLINI
(303) 596-6938
2982 Whileaway Circle W.
Colorado Springs, CO 80917

Disk Only Software

JEFF GUIDE

P. O. Box 244
Lorton, VA 22079
301-369-1339
800-446-4462+897335 at tone

Delphi: TeleData
CompuServe: 74405, 1207
MCI: TDG
Telex: 6501106897 MCI

SUPERIOR SOFTWARE
for the TI 99/4A and Apple II Family of Computers

Great Lakes Software

804 E. GRAND RIVER • HOWELL, MICH. 48843

ERNEST E. CHANDLER III
RICHARD A. PAQUETTE
GARY A. GEORKE

Hardware / Software for
Texas Inst. Phoenix, Atari
Commodore and other P.C.s

Disks, Tapes, Books
Printers, Monitors, Cables etc.

A & L DISTRIBUTORS

AL LAWRENCE
542-1636
17818 6th Ave. N.W.
Seattle, WA 98177

TI-99/4A Hardware & Software
Mortgage Printouts • Household Inventories • Address Labels

COMPUTER DOWNLOAD UNLIMITED

BOB BOONE
(613) 623-7841
25 OTTAWA ST.
ARNPRIOR, ONT.
K7S 1W7

Pilgrims' Pride

COMPUTERS AND SUPPLIES
Factory Authorized Star Printer
Center - Warranty Service
HARDWARE - SOFTWARE - ACCESSORIES
Complete Mail Order Service - Worldwide

J. SCOTT O'GORMAN
Phone: (215) 441-4262
5 WILLIAMS LA.
HATBORO, PA 19040

JAN & KEN WEIDNER
2604 BERNIECE DR.
CHAMPAIGN, IL 61821

COMPUTER'S PLUS

FEATURING TEXAS INSTRUMENTS PRODUCTS
STAR MICRONICS "GEMINI" PRINTERS
ELEPHANT AND MAXELL DISKS

Queen Anne

Sales *Computer Shoppe* Repair

Barb Wiederhold
Phil Jordan

T.I. 99/4A
Consultants
Software/Hardware

6½ Boston #4 (UPSTAIRS)
Seattle, WA 98109
(206) 283-0953

516-475-6463
24 HOUR ON LINE DATA

TEXAMENTS

MICRO COMPUTER SPECIALISTS

STEVEN C. LAMBERTI
PRESIDENT
53 CENTER STREET
PATCHOGUE, N.Y. 11772

MCS

PAUL A. MEADOWS
321 IONY HILL
LR. SACKVILLE, NS
B4E 1M6
902 865 9691

M.C.S.

TEXAS INSTRUMENTS EQUIPMENT AND PARTS
902 362 2582

TOM BERMAN
MARK RIDEOUT

TI STUFFF
Everything for the TI 99/4A Computer
Open noon'til 8 p.m. • Closed Sunday & Tuesday
Sales - Service - Instruction

14 BREWSTER STREET
PORTLAND, MAINE 04103
VOICE 1 (207) 797-2104
MODEM 1 (207) 797-5690

Innovative TI99-4A Hardware & Software

Ryte Data
MILLENNIUM COMPUTERS

210 MOUNTAIN STREET,
HALIBURTON, ONTARIO K0M 1S0
(705) 457-2774
Bruce Ryan

HARDWARE · SOFTWARE · MODEMS · PERIPHERALS · PLUS

The T I Arranger
P.O. Box 789 SPERRY, OK 74073

HAROLD MAYO
918-288-6490

HORIZON
COMPUTER, LIMITED
PO BOX 554
WALBRIDGE, OHIO 43465

HORIZON RAMDISK SOFTWARE UPDATE

HORIZON COMPUTER LIMITED is pleased to announce the release of VER_04 of the Horizon Ramdisk Operating System. Our NEW System Master disk contains Version 04 of the Ramdisk Operating System, Version 3.3 of DM-1000, a new easy to use loader system, and a new comprehensive MEMTEST program for the Ramdisk. Source code is available.

Version 04 of the operating system includes some small changes that are essentially invisible to the user. However, FAST-TERM and FUNNELWRITER will now load with no alterations. Version 3.3 of DM-1000 is the latest from Canada. The new loader system allows the Ramdisk owner to load all necessary software from an Extended Basic LOAD program. Alternatively, software may be loaded using Option 5 Editor/Assembler or Option 3 TI-WRITER.

The VER_04 System Master disk alone is $5.00. The System Master and Source code disks are $10.00. Check the item(s) ordered. Fill in all information requested below. Make checks payable to HORIZON COMPUTER LIMITED. All funds are payable in US currency. Do not send blank disks. Add $2.00 for orders shipped outside North America. Orders shipped to Ohio addresses must include 5.5% sales tax. Please allow four weeks for receipt of order.

___ $5.00 Ramdisk VER_04 System Master Disk only

___ $10.00 Ramdisk VER_04 System Master and Source code disks

NAME _____

SHIPPING ADDRESS _____

MAILING ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____

89% would like to see various projects from the newsletter / user community be developed as kits or products.
92% program in Extended Basic or Assembly Language.
4% have electronic backgrounds.
A resounding 39% did not answer the reader survey.
10% belong to users groups or log onto BBS systems.
50% use or own other computer systems.
A great bunch to be sure! Thankyou all for the input.

SUBSCRIBER RENEWAL TIME:

Read carefully!

Please note that the current year subscription is running out. If your name does NOT have a date next to it - you received issues from January 1986: your subscription will end with the JANUARY 1987 issue.

In order to keep the information coming, send in your renewal today. For current subscribers we are holding to the $14.00 (US funds or

$19.00 CDN funds) price for 1987. You can expect even more exciting information and technical projects, software and hardware. Our planned articles include more assembly, 'c' and Basic programming; more in-depth system info; AND our increased size.

Also note, subscribers who took advantage of the R/D DISK will receive three more disks of software by January. As an extra incentive, we will run all renewals until 2/87 to provide more value.
Renew your subscription today! Simply send your cheque with a note regarding your renewal status. Thankyou!

PS. During this summer, as we shifted to the 16 page size we did not print a "July" issue. That what the VER 12.5 and VER 14.5 issues reflected.

EPROMMER UPDATE

Several people have asked about the EPROM programmer from issue 10/11 and the Mechatronic 'commercial' version.

BOTH of these devices plug into the module port and use an external power supply. They are similar in design and function - with the notable exceptions that 1) you have to build the published version 2) the Mechatronic version has a 'fast programming mode' and 3) more extensive disk based software.

You can program these EPROMs: 2532, 2716 family: 2732, 2764, up to the 16k byte 27128 EPROM. The latter two can also be programmed in the "intelligent or fast mode" using 1ms program pulses.

The EPROMMERs require 32k, disk drive and XB, E/A or MiniMemory. You can load the memory buffer with the contents of ROM, GROM, GRAM or RAM. With the 128k GRAM Card you can also load GPL code as well as E/A code direct from disk. With a special module board you have a complete GPL development system which provides module based programs for 'console only' users.

Please note that the GPL or Assembly code used must be absolute (AORG) addressing. This requires code that does not access the inner console routines. Such routines can be written to function within the module space. (Similar to code for the superspace module).

Price for the Mechatronic EPROM Programmer is $169.95 including power supply, manual and disk software.

TIME vs MCLEANS

After receiving several suggestions to advertise R/D COMPUTING in MICROPENDIUM (from subscribers), we attempted to do this. Partially in

Introducing the greatest thing for 99/4A computer graphics since, well, the introduction of the 99/4A!

For years TI-99/4A owners have looked longingly at programs such as Printshop (R) and Newsroom (R) for Apple, Atari and Commodore computers. We all have wished we could do the things that Fontrix (R) does on the IBM PC. Well, now there is a program for the TI-99/4A that does these things, and because of the special features of the 99/4A, does a whole lot more.

Font Writer, by J. Peter Hoddie (a master programmer — author of Pre-Scan It! and system software for the Myarc Geneve computer) makes text and graphics come truly together for the first time on the 99/4A. Font Writer will combine any TI-Writer text files, TI-Artist or CSGD fonts, and TI-Artist instances the way you want them to make an otherwise drab report, letter or article come alive!

Font Writer, like TI-Writer, is more then one program. The first program in the package is Font Editor — a program that will let you edit existing TI-Artist or CSGD fonts, or create new ones from scratch. Font Editor contains an innovative editing window, dozens of powerful menu-selectable utilities, and supports even more powerful user-defined macro drawing commands for drawing often used figures with a single command. As powerful as it is, like all Asgard products it's designed to be friendly and easy-to-use. It is so flexible that you can even edit TI-Artist instances.

The real power of Font Writer, and it's most innovative part, is the Text Formatter. This program accepts standard TI-Writer files with virtually every imbedded text formatting command supported by TI-Writer, along with many new such commands for graphics support, to allow you to integrate text fully with graphics easily. Text Formatter accepts new commands for printing text in different fonts, including pictures and other graphics, and more. This easy-to-use program is as simple to use as TI-Writer, yet does so much more.

The last, but not in any way least program in the Font Writer package is a powerful organization tool for graphics files. If you have ever tried ordering and maintaining TI-Artist fonts, slides, instances and pictures, you will later wonder why you ever tried without it.

Font Writer requires Extended BASIC, 32K, and a disk drive system. TI-Writer and TI-Artist are highly recommended. Extensive documentation by Walter Howe is included. Available for a suggested price of $24.95 from official Asgard Software dealers, from Teledata*Guide on Compuserve (page TDG-4), by sending Source Mail to TI9720 on Source, or directly from Asgard. All major credit cards accepted.

Asgard Software

P.O. Box 10306
Rockville, MD 20850

conjuction with other products being marketed and in light of the "Product Incentive" draw being held next month.

Well, we got a rather late phone call from Laura Burns of Micropendium. She seemed to feel that because "TIME does not give advertising space to MCLEANS" they would not run our paid ad. They attempted to insert an old Mechatronic ad, which we declined due to the fact of keeping a new product - innovation approach to our advertsing.

Needless to say, Micropendium seems to feel that "competition" is not par for the course. On the other hand, we don't feel that it really is competition. The focus and coverage is not the same. We do not have the distinct advantage of running the newsletter on "in-house" printing presses used to publish a newspaper in Texas... and we haven't been in the publishing business nearly as long. We would be very interested in knowing who does NOT subscribe to Micropendium!
Our loyalty is to the TI 99/4A community - any source of information and support is extremely valuable. If you don't receive MICROPENDIUM, we will be more than happy to sent you in their direction as well.

Genial TRAVelER: 720 sector disk based newsletter. Barry Traver
$30.00 / six months plus bonus disks.
835 Green Valley Drive
Philadelphia, PA 19128

The Smart Programmer /Super 99
Monthly
$18.00 /year
171 Mustang Street
Sulphur, LA 70663

Computer Shopper: all types w/ TI columns & classified ads. $18.00 /yr
407 Washington Ave.
PO Box F
Titusville, FL 32781

TEXAS INSTRUMENTS

TI returned to profitability in the third quarter posting a profit of $14 million (US). Last year Texas Instruments lost $82.8 million, which included a $63.8 million charge for the cost of plant closings and work force reductions.
Revenue was $1.25 billion, up 5% from the $1.19 billion a year earlier.
Improvements in semiconductors and defence electronics resulted in the increase in profitability although the semiconductor operations continue to operate at slighlty below break-even.
Further cost reductions are necessary to achieve profitability, according to Texas Instruments - Dallas.

This is a far cry from the $220 million per year generated by the TI 99/4A in its full production mode. It is also a long way from the current monetary flow going through the support companies which have survived over the past three years. We can only hope, that "Geneve" provides the fuel necessary to keep the TI community from shrinking further. A technically advanced machine should attract new software and hardware development from new companies and from within the 4A ranks.

GRAMCARD KRACKER Ah! How many things are discovered by accident? You want to bet? While idly "fooling" around I decided to load up the GRAM CARD and

TIGERCUB SOFTWARE

Over 130 original entertainment, education and programming utility programs in Basic and Extended Basic on cassette or disk. Only $3.00 each! Eighteen different full-disk collections, just $12.00 each! Descriptive catalogue $1.00 refundable. TIPS FROM TIGERCUB full-disk collections of 50+ programs and files from Tigercub Tips newsletters, Vol. I, II and III $15.00 each; any two $27.00; all three $35.00 postpaid. NUTS & BOLTS (#1) and (#2) full disks of 100+ utility subroutines in XBasic 'merge' format, ready to merge into your own programs: $19.95 each, both for $37.00 with documentation, postpaid. Orders to Tigercub Software, 156 Collingwood Ave., Columbus, OH 43213

SMART MODEMS FOR ONLY:
$39.00

Completely TI compatible. Add $6 if using CorComp RS232. Modems are auto dial/answer, come with RS232 cable, manual and telephone cable. Power supply is NOT included. Power requirements are fully documented. Power supplies may be available for a short period of time. Only 50 modems to sell!

Write to: Smart Modems
14436 FENTON
REDFORD, MI 48239
USA

Send US funds for foreign equivilent. Make check or money order payable to: Scott A Sorel. If a power supply is desired add $10. Money will be refunded if quantities are sold out upon arrival of order.

WANTED: TI99/4A CONSOLES.

Have a spare console? Know anyone who would sell theirs? We only want the console - no software or peripherals needed. Will pay 50% of current, new replacement cost for each console. Must be in working condition.
Looking for old TI disk drives, the SS/SD variety...

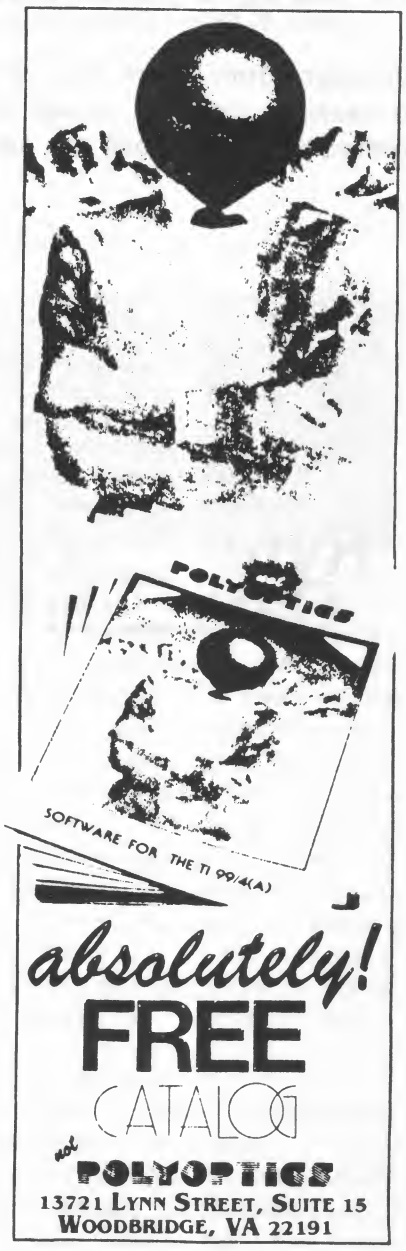
Contact: Ryte Data

MAIL LIST.
Mail list stores up to 400 records. Sort by name. Search by part of last name. Print labels and listings. Entire program loaded into memory eliminating numerous disk changes. Requires TI 99/4A, XBasic, disk drive, 32k mem. Printer optional. Write: K.G. Mori, 181 Atlantic Avenue, Winnipeg, Manitoba R2W 0P7 Canada.

Where is the following subscriber:

CHRIS EISENHART
32283 BOCK
GARDEN CITY, MI 48135

Two others, Yvonne Brunet of Quebec and Jim Doris of North Carolina are sought as well...



SUBSCRIPTION COST:

$14.00 (US) for 12 issues $20.00 Cdn. all via First Class Mail.
$19.00 (US) overseas Airmail Delivery.

BACK ISSUES:

Back issues are available for $2.00 each, **subscribers** only for these issues —

V1.2 sold out.
V1.3 TMS 9995 Memory Map & specs numeric keypad project.
V1.4 XB II **plus** by Mechatronic, Myarc 128k card, Autofire joystick project.
V1.5 32k internal memory project, DS/DD Ramdisk, Auto power-up project.
V1.6 Myarc 256k computer, "C" compiler, RAM/GRAM card.
V1.7 Maximem review, EEROM programmer, Sense and control card.
V1.8 Sold out.
V1.9 Dual disk controller project, RESET switch project.
V1:10-11 Double Issue: LA TI FAIR, Bill Gronos on Assembly, Super load switch, EPROM programmer.
V12.5 Myarc 640k Geneve, Console speed upgrade, Video monitor filter, Gramkracker review, ATRONIC products.
V14.5 Expansion Box 8k 'module,' Super Clock Support, Basic Compiler, 9938 Video Chip.
V15 Video upgrade @ 15mHz, Quad. Density TI Disk Controller, 80 Column Display preview.

YOU MUST NOTIFY US OF YOUR CHANGE OF ADDRESS SIX WEEKS IN ADVANCE. PLEASE SEND A CHANGE OF ADDRESS CARD WITH YOUR OLD AND NEW ADDRESS.

R/D COMPUTING is published monthly by Ryte Data in Haliburton, Ontario. Copyright 1985.

All material is from sources believed to be accurate. The publisher takes no responsibility for errors, omissions or misprints. Articles may be reprinted with credits giving source and address by users groups for publication.

Articles dealing with Texas Instruments 99/4A and 9900 based computers are published. Special attention is given to projects and information on upgrading and modifying the 99/4A console and system.

Please send any information on products, hardware, software, or modifications to our address. We cannot accept responsibility for materials submitted and, unless stated otherwise, will assign all manuscripts etc. for publication.

Only manuscripts with sufficient postage and self-addressed mailer will be returned.

Un-classified ad rates are $1.25 per 40 character line. Count ALL characters, spaces, etc. and submit with payment to our address. Ads are run in order received. Deadline is 21st of each month.

Ryte Data
210 MOUNTAIN STREET
HALIBURTON, ONTARIO K0M 1S0
705 457-2774